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no. 52



UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

Pacific Northwest Forest Experiment Station

FOREST STATISTICS
FOR
MORROW COUNTY, OREGON.

By
Wm. E. Sankela



CALIFORNIA FOREST AND RANGE
EXPERIMENT STATION
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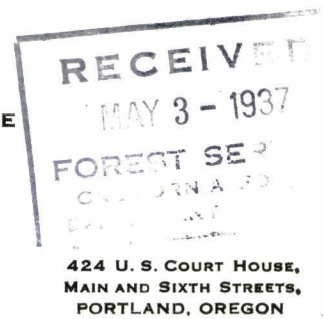
CALIFORNIA FOREST AND RANGE EXPERIMENT STATION
320 GILMAN HALL UNIVERSITY OF CALIFORNIA
BERKELEY, CALIFORNIA

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UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
PACIFIC NORTHWEST FOREST EXPERIMENT STATION



ADDRESS REPLY TO
DIRECTOR
AND REFER TO



R-NW
Forest Survey
County Statistics

April 30, 1937

Director,
California Forest Experiment Station,
332 Giannini Hall,
Berkeley, Calif.

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Dear Mr. Kotok:

A copy of "Forest Statistics for Morrow County, Oregon", the fourteenth of a series of Forest Survey mimeographed reports for eastern Washington and eastern Oregon, is enclosed for your files. The explanatory text, "The Forest Survey of Eastern Oregon and Eastern Washington", which accompanied the first report, should be referred to for detailed type descriptions and methods of survey procedure.

Previously forest statistics have been released for all counties in western Oregon and western Washington; for Klamath, Wasco, Jefferson, Harney, Lake, and Deschutes Counties in eastern Oregon, and for Yakima, Klickitat, Chelan, Kittitas, Okanogan, Ferry, and Walla Walla, Columbia, Garfield, and Asotin Counties in eastern Washington. Additional copies of these reports are available for distribution.

Very truly yours,

THORNTON T. MUNGER, Director

By *R. W. Coulter*
Acting

Enclosure

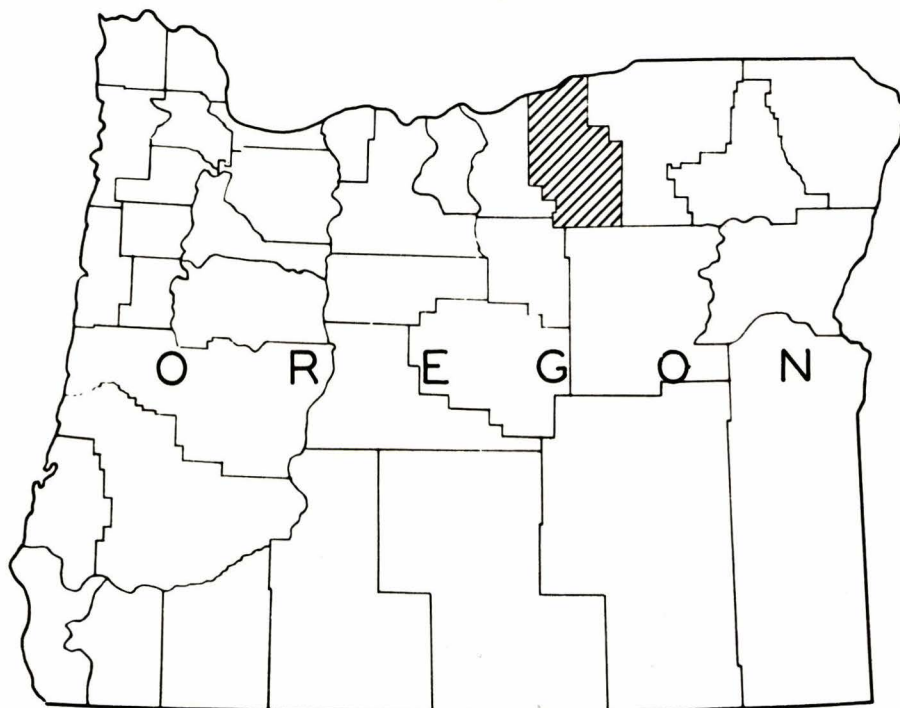
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BERKELEY, CALIFORNIA

FOREST STATISTICS FOR MORROW COUNTY, OREGON

FROM THE INVENTORY PHASE OF THE FOREST SURVEY

Forest Survey report no. 527



U. S. DEPARTMENT OF AGRICULTURE FOREST SERVICE
PACIFIC NORTHWEST FOREST EXPERIMENT STATION
THORNTON T. MUNGER, DIRECTOR

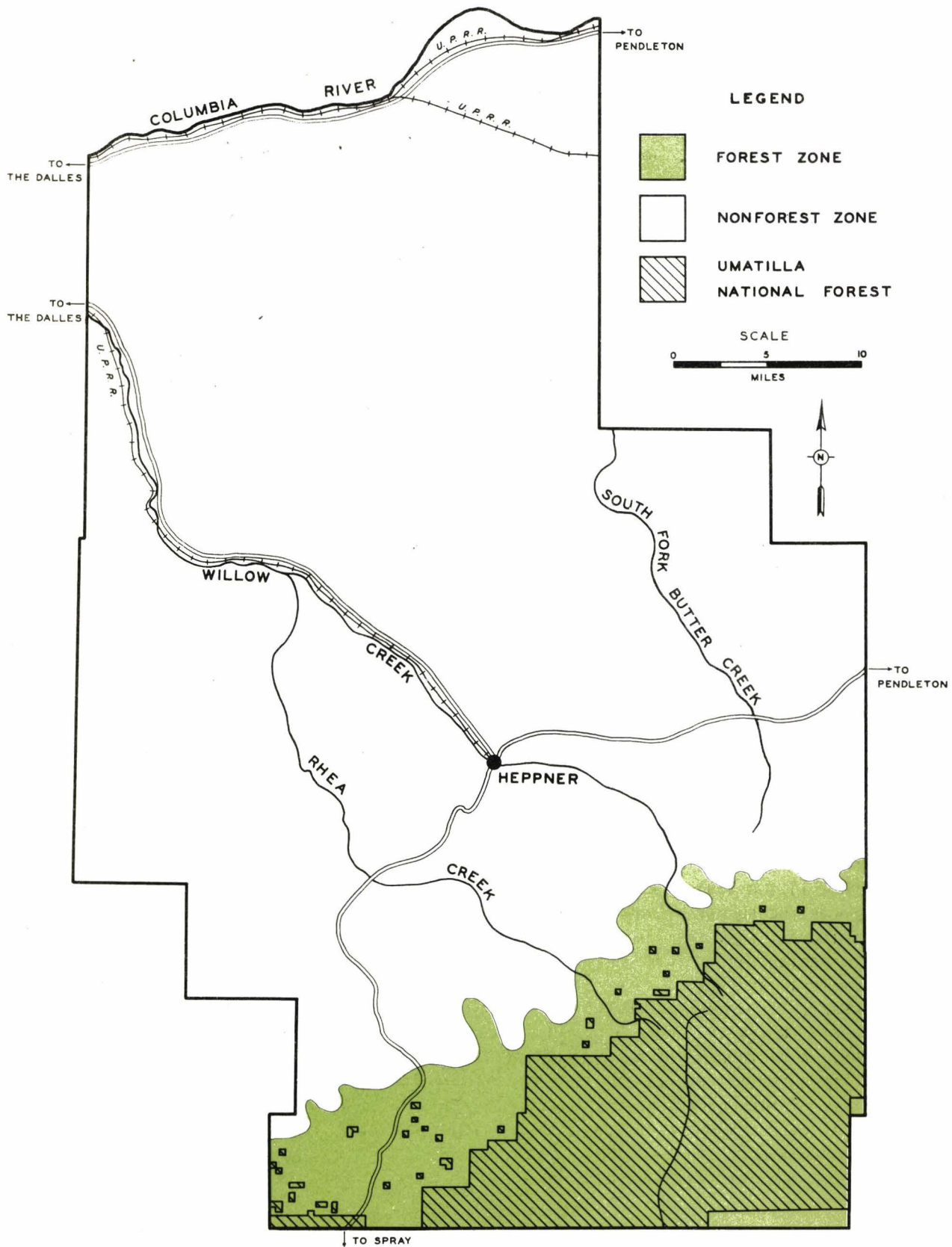
H. J. ANDREWS, IN CHARGE OF FOREST SURVEY R. W. COWLIN, ASSISTANT
WM. E. SANKELA, IN CHARGE OF FIELD AND OFFICE WORK
IN MORROW COUNTY

PORTLAND, OREGON

APRIL 30, 1937

CALIFORNIA FOREST & RANGE EXPERIMENT STATION
330 GIANNINI HALL, UNIVERSITY OF CALIFORNIA
BERKELEY, CALIFORNIA

FIGURE I
OUTLINE MAP
OF
MORROW COUNTY, OREGON
1937



FOREST STATISTICS FOR MORROW COUNTY, OREGON

By Wm. E. Sankela^{1/}

Morrow County consists mainly of nonforested, agricultural, and grazing land, with forests occupying only about one-sixth of the total land area. These forests, concentrated in the extreme southern part of the county, contain valuable stands of saw timber and are of importance to the two main industries, agriculture and stock raising, as a source of wood material and in providing a summer range for cattle and sheep. The forests have little been utilized except to meet the local demands of a small population almost entirely rural in character.

This initial report is the result of a forest survey made by the Forest Service during 1936 as a part of a national survey of forest resources.^{2/} For detailed definitions of the forest types recognized and a description of the method used in the inventory, an explanatory text entitled "The Forest Survey of Eastern Oregon and Eastern Washington" should be read in connection with this report.

Location and Description of County

Morrow County is located in north-central Oregon, being bounded on the north by the Columbia River, on the east by Umatilla County, on the south by Grant County, and on the west by Gilliam and Wheeler Counties. Roughly the county is rectangular in shape and extends southward from the Columbia River some 60 miles and averages about 40 miles in width east and west. The land area is approximately 1,396,000 acres.^{3/}

1/ THE FIELD AND OFFICE WORK OF THE FOREST SURVEY OF MORROW COUNTY WAS DONE BY W. E. SANKELA, P. N. PRATT, D. L. LYNCH, F. L. MORAVETS, A. W. HODGMAN, H. H. ARMSTRONG, B. P. BENNETT, C. E. BROWN, MARION BECQUET, H. A. DE RICE, AND C. L. DE WOLFE.

2/ OREGON AND WASHINGTON WERE DIVIDED FOR PURPOSES OF THE SURVEY INTO TWO REGIONS (1) THE DOUGLAS FIR REGION, CONSISTING OF THAT PART OF BOTH STATES WEST OF THE SUMMIT OF THE CASCADE RANGE, AND (2) EASTERN OREGON AND EASTERN WASHINGTON, THAT PART OF BOTH STATES EAST OF THE SUMMIT OF THE CASCADE RANGE. EACH REGION WAS DIVIDED INTO FOREST SURVEY UNITS COMPOSED OF ONE OR MORE COUNTIES. AT A LATER DATE A REPORT WILL BE ISSUED FOR EACH SURVEY UNIT PRESENTING A TEXTUAL DESCRIPTION OF THE UNIT, DETAILED INVENTORY SUMMARIES, AND STATISTICS OF GROWTH AND DEPLETION ANALYZED IN THE LIGHT OF THE INVENTORY. A REGIONAL REPORT WILL ALSO BE ISSUED WHICH WILL PRESENT AND DISCUSS FINDINGS FOR THE REGION AS A WHOLE. THE REGIONAL REPORT WILL INCLUDE AN INTERPRETATION OF THE FOREST SURVEY DATA AS RELATED TO OTHER ECONOMIC DATA AND A COMPREHENSIVE ANALYSIS OF THE REGIONAL FOREST SITUATION FROM BOTH A PHYSICAL AND AN ECONOMIC STANDPOINT.

3/ ACCORDING TO THE BUREAU OF CENSUS.

The topography varies from a gently rolling plain adjoining the Columbia River to broad plateaus and rounded ridges in the central part which merge with the more rugged terrain of a forested spur of the Blue Mountains in the southern part of the county. This mountainous spur divides the waters of the Columbia River and the John Day. The topography changes from rounded summits and gentle slopes along the crest of the divide to long narrow ridges with precipitous slopes and escarpments on the south and to more rounded ridges with moderately deep canyons on the north. The higher elevations of over 4,000 feet occur in a series of buttes and summits adjacent to the boundary of Umatilla County.

The prevailing drainage is north to the Columbia River with three streams, Willow Creek, Rhea Creek, and Butter Creek, draining the bulk of the county. These streams have their headwaters in the northern portion of the forest zone, but most of the drainage of the forested area is tributary to the south to the John Day River.

Climatic conditions vary but little, most of the county being semi-arid. The precipitation is least in the low country along the Columbia River and increases with elevation to culminate in the rugged southern portion of the county, where much of the precipitation falls as snow, remaining on the ground throughout the winter. The average annual rainfall from 1889 to 1936 at Heppner, which is located in the center of the county at an elevation of 1,950 feet, is 13.6 inches. The bulk of the precipitation falls in the spring and practically all of the remainder in the fall.

This county is served by both railroad and highway. The Union Pacific crosses the northern part and a branch line, ascending Willow Creek to Heppner, links that town with transcontinental rail service. The railhead is within 15 to 25 miles of commercial timber. A standard State highway parallels the railroad and continues southward from Heppner to cross the timbered area in the southwestern part of the county. Numerous secondary roads traverse the open country. A main traveled forest road follows the summit of the mountainous area, and many branch roads make the forested area quite accessible.

The county is very sparsely inhabited, the total population in 1930 being only 4,941, or an average of 2.4 persons per square mile. Slightly more than half the population are actually resident on farms. Heppner, the county seat, is the largest town, having a population of 1,190. It is the trading center of the surrounding cattle and farming districts. No other towns of over five hundred inhabitants exist.

Nonforest Zone and Agricultural Development

Agriculture and stock raising are the most important economic pursuits; over 60 percent of the gainful workers in the county are engaged in agriculture. Forest industries employ less than 2 percent of all those gainfully employed.

Of the total area of 1,296,000 acres, 83.8 percent is non-forest land and according to the report of the Bureau of the Census only 134,449 acres of crop land was harvested in 1934, wheat land comprising approximately 70 percent of this acreage, yielding about 800,000 bushels. Other small grains and alfalfa make up the other principal crops.

Even with precipitation a limiting factor, irrigation is not of great importance, only 9,150 acres, devoted mainly to the production of alfalfa along the principal streams, being under irrigation. The hay produced is an important source of winter feed for stock. In most cases the water is obtained by gravity diversion from streams.

With the large acreage of land suitable for grazing, only 303,191 acres being available for crops,^{4/} stock raising is of importance. On January 1, 1935, 139,121 sheep and 12,213 cattle were owned in the county. The sheep produced almost one and one-half million pounds of wool in 1934. Many of the sheep that are grazed on the national forests of Grant and Umatilla Counties winter in Morrow County where the home ranches are located.

The Forests

The forest zone is limited to the mountainous area in the southern part of the county. From the summit of the Blue Mountains the timber belt extends north about six miles and breaks abruptly into the open country with a few stringers of ponderosa pine extending further down the main canyons.^{5/} On this slope the timber cover is virtually solid. The south slope to the county boundary is timbered, with open ridges and timber in the canyons being characteristic of the southeastern part adjoining Grant County. Forest lands constitute 210,630 acres or 16 percent of the total area of Morrow County.

Commercial forest types predominate in the stands composing the forest zone, 90 percent being occupied by forests of sawlog size over 12 inches in diameter breast high. Ponderosa pine is the most valuable species on 76 percent of this area with a total of 160,000 acres. Types with Douglas fir predominant in volume and mixed stands of Douglas fir, western larch, white fir, and some Engelmann spruce and lodgepole pine make up the remaining 14 percent of the commercial forest area.

^{4/} BUREAU OF CENSUS REPORT FOR 1935.

^{5/} LOCATION AND EXTENT OF FOREST TYPES ARE SHOWN BY FOREST SURVEY TYPE MAPS. INFORMATION REGARDING 1-INCH-TO-THE-MILE COUNTY TYPE MAPS AND $\frac{1}{4}$ -INCH-TO-THE-MILE LITHOGRAPHED STATE TYPE MAPS AND HOW THEY MAY BE OBTAINED WILL BE FURNISHED UPON REQUEST. ADDRESS DIRECTOR, PACIFIC NORTHWEST FOREST EXPERIMENT STATION, 423 U. S. COURT HOUSE, PORTLAND, OREGON.

Saw-Timber Types

Stands containing 50 percent or more of ponderosa pine by volume, 22 inches or more in diameter breast high (types 20 and 20 $\frac{1}{2}$) gross in area 142,690 acres, two-thirds of all the forest land. These types have the bulk of the volume of the most valuable timber and are the most accessible.

On moist, cool slopes and canyons in the pine zone are found the mixed pine types (type 27), with Douglas fir and western larch being the companion species of ponderosa pine. Two and one-half percent of the forest land area is occupied by this type.

The ponderosa pine woodlands (type 5 $\frac{1}{2}$) are characteristic of the open ridges adjacent to the canyons and escarpments of the North Fork of the John Day River. Growing on unfavorable sites the average volume is low, varying from 2 to 3 M per acre. This type is of minor importance.

Much of the higher elevations and the north slope of the forest zone is covered by stands with Douglas fir the key species (type 8) and mixed stands of Douglas fir, western larch, white fir, and some lodgepole pine and Engelmann spruce (type 27 $\frac{1}{2}$). The upper-slope type is also found in the ponderosa pine zone proper in deep canyons on moist sites. The 30,000 acres found in these stands are the least valuable of the sawlog forests and are the least accessible, being largely situated on steep north slopes or in deep canyons.

Logging has been the cause of almost four-fifths of the 8,775 acres of immature stands of ponderosa pine 12 to 22 inches diameter breast high (type 21). These all carry a volume of one thousand board feet or more per acre. Of all the cut-over stands 54 percent are well stocked with reproduction, 41 percent being medium stocked and only 5 percent poorly stocked.^{6/} The uncut stands average medium in stocking.

Pole, Sapling and Seedling Types

The ponderosa reproduction stands (types 22 and 28) together total nearly 2,400 acres, being practically equal in area. Most of the immature stands with ponderosa pine composing 50 percent or more have come in following fires and are on the whole poorly stocked. Heavy cutting of saw timber has resulted mostly in uneven-aged mixed reproduction stands (type 28) with ponderosa pine comprising less

^{6/} REPRODUCTION INCLUDES ALL TREES LESS THAN 12 INCHES D.B.H., I.E., POLES, SAPLINGS AND SEEDLINGS. CLASSIFICATION IN TERMS OF NORMAL STOCKING IS AS FOLLOWS: WELL STOCKED, 70 TO 100 PERCENT; MEDIUM STOCKED, 40 TO 69 PERCENT; POORLY STOCKED, 10 TO 39 PERCENT; NONSTOCKED, LESS THAN 10 PERCENT.

than half of the stand. These mixed cut-over stands constitute almost 100 percent of the immature pine mixture types.

The immature upper-slope types (type 28¹/₂) have all followed fires and total only 1,710 acres.

Noncommercial and Woodland Types

The large majority of the noncommercial forest area is occupied by lodgepole pine type which ranks third in area among the forest cover types in the county. Found at the higher elevations, it seldom reaches sawlog size as a type. On only 90 acres of the total of 16,175 acres stands averaged over 12 inches in diameter. About one-third of the lodgepole pine type has succeeded other forests as a result of fires destroying the original stand. Western juniper (types 5A and 5B), together with noncommercial rocky areas (type 38) gross less than a thousand acres, and are found adjacent to the poorer ponderosa pine sites.

Productive Capacity of Forest Land

The forest land of the county is classified according to its productive capacity in table 4. With the exception of lodgepole pine types, juniper types, and noncommercial types, all forest land was rated according to its ability to produce ponderosa pine or Douglas fir trees.

The ponderosa pine forests are about average in productivity, being almost exclusively site IV. Forests measured by the Douglas fir site factor were found to be almost all site V, the least productive site.

Volume of Merchantable Timber

The total volume of timber in Morrow County is 1,504,000 M board feet (table 1), of which ponderosa pine with 1,200,000 M board feet comprises almost 80 percent. Douglas fir ranks second with 12 percent and western larch, lowland white fir, lodgepole pine, and Engelmann spruce, compose the remainder. Most of the ponderosa pine is of average quality for the ponderosa pine region, varying in volume in different stands from 5 to 20 M board feet, often the change being abrupt.

Ownership of Forest Land

As shown by figure 3, most of the forest land is in national forest and private ownership. Private lands have 48 percent of the merchantable types with 55 percent of the total volume, while national forest lands have 49 and 42 percent, respectively. Of the more valuable ponderosa pine types, the acreages in the two ownerships are approximately the same but private lands have almost twice the volume.

The average holding of private forest land is large, over 60 percent of the acreage being in blocks of 1,000 acres or more.

Depletion and Logging Conditions

Logging has largely been limited to small mills operating in private timber adjacent to the open country, with 5 percent of the merchantable types having been cut.

The capacity of the sawmills in the county is low, being limited to mills which operate intermittently. The operating mills of the past year have a combined capacity of 45 thousand board feet of lumber per day. Much of the present lumber production is shipped outside of the county, being trucked to the railhead at Heppner.

Most of the commercial timber is easily accessible to existing roads and logging conditions are favorable, especially in the western part of the forest zone. Some of the ponderosa pine growing in the canyons of the south slope of the forest area is not economically available.

In Morrow County the average annual cut during the past ten years has been less than half a million feet, log scale, which is but a small part of the sustained yield capacity of the county's forest land and an even smaller part of the annual cut allowable during the period the forests would be transferred from a virgin to a sustained yield basis. However, the forests of Morrow County cannot be considered as constituting an independent operating unit but should be considered as an integral part of a larger natural operating unit which also includes the accessible forests north of the John Day River in Grant and Wheeler Counties. A cooperative public and private sustained yield management plan has been made for this larger unit within which production is somewhere near the sustained yield capacity. Under this plan Morrow County timber, as well as that in the northern part of Grant and Wheeler Counties, would be managed as a single unit and probably milled at one place.

Very probably small mills cutting on small tracts not included in this plan will more than meet the local demand for lumber within Morrow County.

The forests furnish forage for a considerable number of stock. All of the principal streams of the county have their headwaters in the forested area. With proper management the forests of Morrow County will probably attain their highest economic use as a source of wood material and forage plants and as a protector and regulator of water supplies and stream flow.

FOREST STATISTICS FOR MORROW COUNTY, OREGON
FROM INVENTORY PHASE OF FOREST SURVEY

TABLE 1. VOLUME OF TIMBER BY SPECIES AND BY OWNERSHIP CLASS
DATA CORRECTED TO JULY 15, 1936

TREES 12" AND MORE IN D.B.H.
THOUSANDS OF BOARD FEET, LOG SCALE, SCRIBNER RULE

						FEDERAL	
SUR-:		STATE,				NATIONAL	
VEY :	SPECIES ^{1/}	PRIVATE	AVAILABLE	COUNTY	PUBLIC	FOREST,	TOTAL
SYM-:		FOR			DOMAIN	AVAILABLE	
BOL :		CUTTING				FOR CUTTING:	
Y :	PONDEROSA PINE	710,865	2,563	19,122	7,511	438,463	1,178,524
LP :	LOGEPOLE PINE	399	25	19		3,062	3,505
DF :	DOUGLAS FIR	72,331	113	2,036	429	100,642	175,551
WF :	LOWLAND WHITE FIR	14,624	60	258	75	29,508	44,525
WL :	WESTERN LARCH	32,663	262	1,328	22	61,343	95,618
ES :	ENGELMANN SPRUCE	2,725		20		3,520	6,265
TOTAL		833,607	3,023	22,783	8,037	636,538	1,503,988

^{1/} SPECIES NOT LISTED HERE THAT OCCUR IN THE COUNTY ARE (1) WESTERN JUNIPER, VOLUME OF WHICH WAS DETERMINED TO BE 900 CORDS, AND (2) NORTHERN BLACK COTTONWOOD, WHICH OCCURS IN A NEGLIGIBLE QUANTITY ONLY.

FOREST STATISTICS FOR MORROW COUNTY, OREGON
FROM INVENTORY PHASE OF FOREST SURVEY

TABLE 2. AREA, IN ACRES, OF ALL FOREST COVER TYPES, BY OWNERSHIP CLASS
DATA CORRECTED TO JULY 15, 1936

SUR- VEY TYPE NO.	TYPE DEFINITION	FEDERAL					
		PRIVATE	STATE,	COUNTY	PUBLIC	NATIONAL	TOTAL
			AVAILABLE		DOMAIN	FOREST,	
			FOR			AVAILABLE	
			CUTTING			FOR CUTTING	
	WOODLAND:						
5A	DENSE JUNIPER; JUNIPER OR MOUNTAIN MAHOGANY FORESTS OCCUPYING 10% OR MORE OF THE LAND AREA	35				15	50
5B	SCATTERED JUNIPER; JUNIPER OR MOUNTAIN MAHOGANY FORESTS OCCUPYING 5 TO 10% OF THE LAND AREA					620	620
5 $\frac{1}{2}$	PONDEROSA PINE WOODLAND; SCATTERED STANDS OF MATURE PONDEROSA PINE ON UNFAVORABLE SITES	780		100	235	2,020	3,135
	PONDEROSA PINE; FORESTS CONTAINING 50% OR MORE OF PONDEROSA PINE						
20	PONDEROSA PINE, LARGE; FORESTS CONTAINING 50 TO 80% OF PONDEROSA PINE, MORE THAN 22" DBH	11,235	60	395	35	14,560	26,285
20.5	PURE PONDEROSA PINE, LARGE; FORESTS CONTAINING 80% OR MORE OF PONDEROSA PINE, MORE THAN 22" DBH	63,275	240	2,410	1,085	49,395	116,405
21	PONDEROSA PINE, SMALL; 12 TO 22" DBH	7,190	20	80	15	1,470	8,775
22	PONDEROSA PINE, SEEDLINGS, SAPLINGS, AND POLES; LESS THAN 12" DBH	545		220		535	1,300
	PINE MIXTURE; MIXED FORESTS CONTAINING 20 TO 50% OF PONDEROSA PINE:						
27	PINE MIXTURE, LARGE; 12" OR MORE DBH	1,660		30		3,480	5,170
28	PINE MIXTURE, SMALL; LESS THAN 12" DBH	1,065		20		5	1,090
	DOUGLAS FIR; FORESTS CONTAINING 60% OR MORE OF DOUGLAS FIR						
8	DOUGLAS FIR, LARGE SECOND GROWTH; 22 TO 40" DBH	1,450		45		3,110	4,605
	UPPER-SLOPE MIXTURE; MIXED FORESTS OF WESTERN LARCH, DOUGLAS FIR, ENGELMANN SPRUCE, LOWLAND WHITE FIR, OR LODGEPOLE PINE; OCCASIONALLY OTHER SPECIES						
27 $\frac{1}{2}$	UPPER-SLOPE MIXTURE, LARGE; MORE THAN 12" DBH	6,040	60	230	25	18,640	24,995
28 $\frac{1}{2}$	UPPER-SLOPE MIXTURE, SMALL; LESS THAN 12" DBH	705		15		990	1,710
	LODGEPOLE PINE; FORESTS CONTAINING 50% OR MORE OF LODGEPOLE PINE						
25	LODGEPOLE PINE, LARGE; 12" OR MORE DBH					90	90
26	LODGEPOLE PINE, MEDIUM; 6 TO 10" DBH	3,385	120	80		8,815	12,400
26A	LODGEPOLE PINE, SMALL; LESS THAN 6" DBH	250		170		3,355	3,775
	NONRESTOCKED CUTOVERS; LOGGED AREAS NOT SATISFACTORILY RESTOCKED AND NOT CARRYING A RESIDUAL STAND OF 1 M OR MORE PER ACRE						
35B	CUT BEFORE 1920	50					50
38	NONCOMMERCIAL ROCKY AREAS	40				135	175
TOTALS FOR FOREST LAND		97,705	500	3,795	1,395	107,235	210,630
2	NONFOREST LAND; CULTIVATED, GRASS, SAGEBRUSH, ETC.		1,067,375	ACRES OF NONFOREST LAND			
				UNCLASSIFIED BY OWNERSHIP			
						17,995	1,085,370
TOTALS FOR COUNTY						125,230	1,296,000

1/ THE TOTAL AREA OF THE COUNTY, ACCORDING TO THE BUREAU OF THE CENSUS, IS 1,296,000 ACRES. OF THIS TOTAL, 228,625 ACRES WAS CLASSIFIED AS TO OWNERSHIP BY THE FOREST SURVEY.

FOREST STATISTICS FOR MORROW COUNTY, OREGON
FROM INVENTORY PHASE OF FOREST SURVEY

TABLE 3. AREA, IN ACRES, OF GENERALIZED FOREST TYPES, BY OWNERSHIP CLASS
DATA CORRECTED TO JULY 15, 1936

TYPE DEFINITION	PRIVATE	STATE,	COUNTY	FEDERAL		TOTAL
		AVAILABLE		NATIONAL		
		FOR		FOREST,		
		CUTTING		AVAILABLE FOR CUTTING		
WOODLAND: JUNIPER						
SURVEY TYPES 5A AND 5B	35				635	670
PONDEROSA PINE 12" OR MORE DBH						
SURVEY TYPES 5½, 20, 20.5, 21, AND 27	84,140	320	3,015	1,370	70,925	159,770
PONDEROSA PINE LESS THAN 12" DBH						
ON CUTOVER AREAS	1,160		110		5	1,275
SURVEY TYPES 22 AND 28	450		130		535	1,115
TOTAL	1,610		240		540	2,390
CONIFERS 12" OR MORE DBH OTHER THAN PONDEROSA PINE						
AND LODGEPOLE PINE						
SURVEY TYPES 8 AND 27½	7,490	60	275	25	21,750	29,600
CONIFERS LESS THAN 12" DBH OTHER THAN PONDEROSA						
PINE AND LODGEPOLE PINE						
ON OLD BURNS	705		15		990	1,710
SURVEY TYPE 28½						
LODGEPOLE PINE 12" OR MORE DBH						
SURVEY TYPE 25					90	90
LODGEPOLE PINE LESS THAN 12" DBH						
SURVEY TYPES 26 AND 26A	3,635	120	250		12,170	16,175
NONCOMMERCIAL AREAS						
SURVEY TYPE 38	40				135	175
NONRESTOCKED CUTOVER AREAS						
SURVEY TYPE 35B	50					50
TOTALS FOR FOREST LAND	97,705	500	3,795	1,395	107,235	210,630
NONFOREST LAND						
SURVEY TYPE 2	1,067,375	ACRES OF NONFOREST LAND				
		UNCLASSIFIED BY OWNERSHIP			17,995	1,085,370
TOTALS FOR COUNTY					125,230	1,296,000

1/ THE TOTAL AREA OF THE COUNTY, ACCORDING TO THE BUREAU OF THE CENSUS, IS 1,296,000 ACRES. OF THIS TOTAL, 228,625 ACRES WAS CLASSIFIED AS TO OWNERSHIP BY THE FOREST SURVEY.

FOREST STATISTICS FOR MORROW COUNTY, OREGON
FROM INVENTORY PHASE OF FOREST SURVEY

TABLE 4. AREA OF FOREST LAND, BY SITE QUALITY
DATA CORRECTED TO JULY 15, 1936

TYPE	SITE QUALITY CLASS ^{1/}	ACRES	AREA			
			PERCENTAGE OF--			
			CONIFEROUS :			
			FOREST LAND :	TOTAL :	TOTAL :	AREA OF
			CLASSIFIED :	FOREST :	LAND ^{2/} :	COUNTY
			AS TO SITE :			
			QUALITY :			
PONDEROSA PINE AND PONDEROSA PINE MIXTURE	PONDEROSA PINE	III :	2,650 :	1.3 :	1.2 :	0.2
		IV :	156,955 :	79.1 :	74.5 :	12.1
		V :	2,925 :	1.5 :	1.4 :	0.2
			162,530 :	81.9 :	77.1 :	12.5
DOUGLAS FIR AND UPPER-SLOPE MIXTURE	DOUGLAS FIR	IV :	2,905 :	1.5 :	1.4 :	0.2
		V :	33,030 :	16.6 :	15.7 :	2.6
			35,935 :	18.1 :	17.1 :	2.8
TOTAL			198,465 :	100.0 :	94.2 :	15.3
LODGEPOLE PINE			^{3/} 11,320 :		5.4 :	0.8
JUNIPER			670 :		0.3 :	
NONCOMMERCIAL ROCKY AREAS			175 :		0.1 :	0.1
TOTAL			12,165 :		5.8 :	0.9
GRAND TOTAL			210,630 :		100.0 :	16.2

- ^{1/} THE "SITE QUALITY" OF A FOREST AREA IS ITS RELATIVE PRODUCTIVE CAPACITY, DETERMINED BY CLIMATIC, SOIL, TOPOGRAPHIC, AND OTHER FACTORS. THE INDEX OF SITE QUALITY IS THE AVERAGE HEIGHT OF THE DOMINANT STAND AT THE AGE OF 100 YEARS. SIX SITE QUALITY CLASSES ARE RECOGNIZED FOR PONDEROSA PINE AND FIVE FOR DOUGLAS FIR, CLASS I BEING IN EACH CASE THE HIGHEST. IN THE SURVEY THE PONDEROSA PINE AND DOUGLAS FIR CLASSIFICATIONS, RESPECTIVELY, WERE USED NOT ONLY FOR TYPES OF WHICH THESE SPECIES ARE CHARACTERISTIC COMPONENTS BUT FOR OTHER TYPES FOR WHICH NO SITE QUALITY CLASSIFICATIONS HAVE BEEN DEVELOPED.
- ^{2/} THE COUNTY HAS A TOTAL AREA OF 1,296,000 ACRES (ACCORDING TO THE REPORT OF THE BUREAU OF CENSUS FOR 1930), OF WHICH 210,630 ACRES (16.2 PERCENT) IS FOREST LAND AND 1,085,370 ACRES (83.8 PERCENT) IS NONFOREST LAND.
- ^{3/} EXCLUSIVE OF 4,945 ACRES OF LODGEPOLE PINE WHICH WAS INCLUDED IN THE DOUGLAS FIR AND PONDEROSA PINE SITES.

FOREST STATISTICS FOR MORROW COUNTY, OREGON

FROM INVENTORY PHASE OF FOREST SURVEY

FIGURE 2. DISTRIBUTION OF SAW-TIMBER VOLUME BY SPECIES AND OWNERSHIP CLASS (FROM TABLE 1)

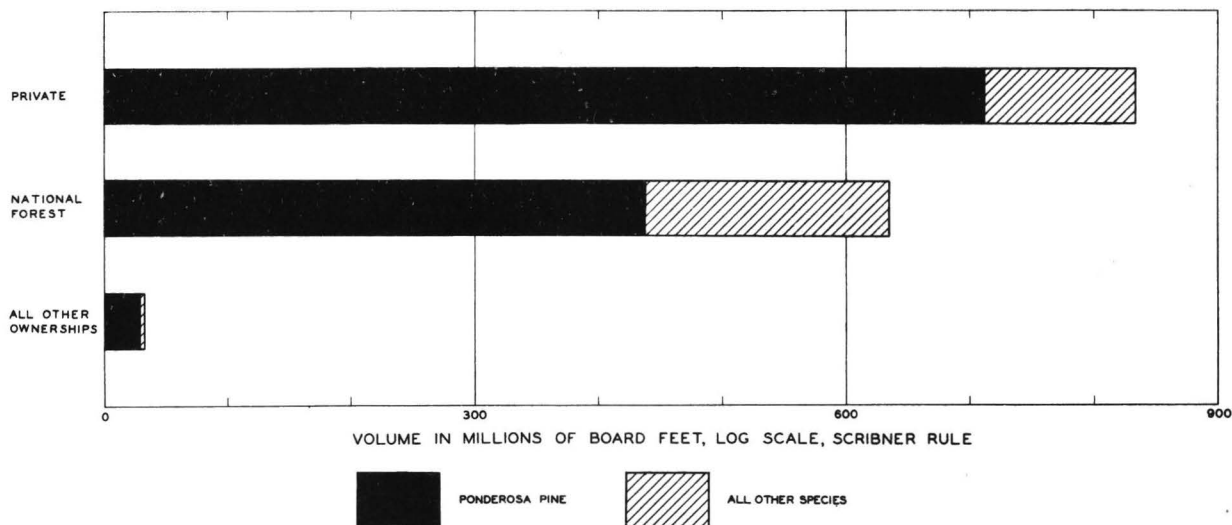


FIGURE 3. OWNERSHIP OF FOREST LAND (FROM TABLE 2)

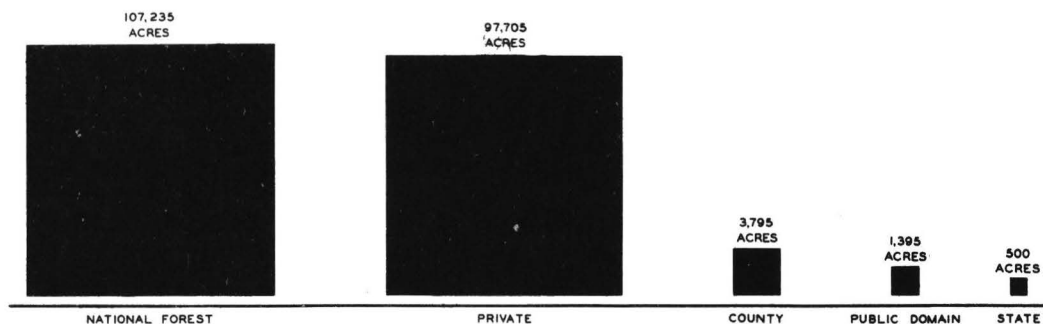


FIGURE 4. DISTRIBUTION OF FOREST LAND BY GENERALIZED TYPES ALL OWNERSHIP CLASSES (FROM TABLE 3)

